



A Brief Overview of Securing Research Funding for Universities Self-Sufficiency

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Abstract

Universities ensure the advancement of civilizations in other domains as respectable hubs for scientific study. As has been required for many years, it must be acknowledged that Afghanistan's academic and scientific institutions have not kept up with the modern world. Since the government of Afghanistan covers all university expenditures, these actions necessitate research funding. This study is a brief analysis based on other people's experiences allocating research funds to universities in order to help them become self-sufficient. The Library-Study was used to conduct the study. The findings of this study demonstrate that the vision, mission, and nature of the interaction between universities and society have evolved as a result of their duty to apply the findings of scientific research to address the demands of society's objective challenges. By employing scientific productivity, initiatives, and innovation while submitting funding requests, universities can accomplish their objectives. Both developed and emerging nations can follow this trend, which states that each academic employee in industrialized nations contributes between \$9,400 and \$219,100 to government revenue and university capital each year. Scientific research will continue to be the standard procedure solely for advancement to the ranks of scientific staff members if Afghanistan's educational institutions do not take fundamental and sound measures in this process based on experiences from around the world.

Keywords: Afghanistan, Research Revenue, Research Budget, Scientific-Research, Universities.

Introduction

Universities as a pivotal point have attracted a remarkable attention in recent years. Since higher education unquestionably contributes to economic growth, political power, social welfare, and cultural development, they can guarantee the advancement of societies in a variety of areas (Woodhall, 2004). By increasing productivity, raising individual incomes, training capable managers and leaders, giving people more options in life, and producing more skilled labor as human resources, higher education helps nations thrive (Tilak, 2000). Higher education is crucial because it gives societies access to human resources. Indeed, these human resources will be the future leaders in education, scholars, researchers,

professors, instructors, consultants, and managers. They will produce and implement new ideas and information. Such people should be in charge of analyzing a nation's development problems and offering both the public and private sectors specialized services (Sanyal, 2001). Other purposes, goals, and results of higher education include establishing the values of endurance and patience, democracy, scientific decision-making, reaching individual objectives, improving health, lowering crime rates, and encouraging more societal cooperation (ESIB, 2005).

However, without adequate funding, such activities cannot be completed, and in order to survive and expand, colleges must diversify their funding sources for sustainable development. This is particularly true when practically every nation is experiencing a financial crisis and the welfare state and a shift in perspective toward social welfare are becoming more prevalent.

Finding funding sources and considering their organizational budgeting model can be among the most difficult challenges for many university academics (Ibrisevic, 2018). It goes without saying that in times of financial need, hurried and impromptu attempts to raise money may occur, accompanied by pandemonium (William Landes Foster et al., 2009).

It is clear that universities today are required to operate as research organizations in addition to being educational and teaching establishments that supply human resources. With a clear understanding of the problems facing society, they ought to do study to find practical answers and enhance the state of human societies. Universities can thus be positioned in the front of a society that may face a number of difficulties, including those related to the economy, society, health, education, politics, and technology. These academic institutions believe they are in charge of resolving the issues. Nowadays in the context of Afghanistan, universities are increasingly focusing on enhancing the English language skills of their faculty members to improve the quality of education and research output (Hasanzoy & Shinwari, 2024).

Furthermore, new technologies and the widespread use of the internet have significantly changed business, education, research, and technological advancement. All of these fields require a high level of English proficiency because most universities are unable to meet the demands of the workplace (Hasanzoy & Abid, 2023).



Figure 1. presents examples of current societal challenges and the obligations of universities in addressing them.

Scientific developments have not always been advanced at the same level throughout history. While scientific and research advancements have been advanced slowly in some historical periods, the world has experienced great acceleration in other fields however, Afghanistan is in its primary stage in the same scientific fields. (Saify et al., 2012, Saify et al., 2012 & Saify et al., 2013). Afghanistan's progress in knowledge creation and social welfare for the nation's self-sufficiency has been sluggish and disorganized because of the lack of research activities. Given the harsh reality of Afghanistan which faces many real obstacles to self-sufficiency for a variety of reasons, its educational institutions have failed to appropriately recognize and address these social issues in the various sectors as required and to take basic steps for rational solutions. The fact that colleges in both industrialized and some developing nations have advanced to the fourth and fifth generations, cannot be denied. Universities that focus on degrees are referred to as the first generation, followed by those that focus on research, entrepreneurial universities, industry-oriented universities, and specialized universities in the fifth generation.

Table 1. From First to Fifth Generation Universities: Social Roles and Responsibilities.

Universities Generation	Objectives and Strategic Plans
First Generation Universities (Teaching-oriented)	Purely theoretical education with diploma issuance
Second Generation Universities (Research-oriented)	Examining the tangible challenges of society and commencing scientific knowledge generation
Third Generation Universities (Entrepreneurial)	Establishing employment opportunities
Fourth Generation Universities (Industry-oriented)	Stakeholder in the labor market
Fifth Generation Universities (Specialized)	Specialization (Training human resources in specific fields)

Material and Method

The data used in this study, which is based on a library study, came from reputable national and international sources as well as trustworthy websites that offer statistical data. The data was analyzed using thematic analysis. The APA technique has been used for the reference and source citation in this study.

Strategic Goals of Today's Universities and Securing Financial Budgets

One of the most crucial objectives of universities is to offer scientific, educational, and research services to society, taking into account the evolving mission and purpose of universities as well as the rising expectations of society. Universities are also in charge of supplying communities with human resources and boosting human capital. In light of these considerations, institutions must work harder to satisfy societal demands and gain admission to the next generation of colleges. Moving from the first generation, which is degree-oriented, to the second generation, which is research-oriented, necessitates fortifying the research foundations. It is clear that universities will struggle to carry out their responsibilities and make proper progress toward reaching the second generation and contributing to the nation's economic development cycle if they lack the financial resources

to accomplish their objectives. Thus, one of the biggest obstacles universities face in the area of scientific research is obtaining adequate financial financing. Universities are the only scientific institutions in underdeveloped nations that can provide the manpower and intellectual capital that society needs. They are the only organizations capable of fostering the information-based economy and the only ones able to carry out important initiatives in fields like technology transfer, innovation, and knowledge production. Therefore, one of the government's primary duties is to provide financial assistance for colleges. Government budgetary allocations, however, are never sufficient to meet actual needs and do not account for the anticipated growth of factors like the number of teachers, students, administrative personnel, physical spaces, and lab equipment. The quality of university operations and educational institutions will deteriorate as a result of the actual budget cut. Other industries will also be impacted by the deterioration in quality of higher education because it is a cross-sectoral field. Universities will thus find themselves in a worse position each year if they solely rely on increases in government-approved budgets (Roshan, 2012). Every business or organization needs capital and financial resources to run its operations, and it cannot continue to operate without investing money in a variety of projects. At the same time, any business or organization with a long-term goal employs a variety of strategies to raise money and, as a result, maintain the business. Generally speaking, a sufficient and suitable budget can serve as both a tool and an indicator of a higher education institution's supremacy over others. Better teachers and more gifted students are likely to be drawn to universities that can afford to pay their faculty members more and buy the best equipment for their classrooms. This is especially true for systems that function in a competitive setting. Nonetheless, it is impossible to ignore the significance and function of a higher education institution's financial standing in raising the caliber of its research and teaching services (Russel, 1967).

The aforementioned objectives necessitate a number of academic procedures, such as the establishment of research centers to empower human resources, because modern educational institutions view themselves as accountable for producing an efficient workforce for society. They therefore need money and financial assistance. In order to accomplish their strategic goals, both developed and developing nations use scientific research to produce a modest revenue through industrial, applied, consulting, technological, medical, and scientific projects.

A Brief Look at the Research Experiences and Incomes of Some Countries

From the start, budget distribution agencies (such the Ministry of Finance) in many nations have viewed university money as an investment in research and education facilities rather than a consumer item. The difficulties faced by scientific research institutes as they worked toward self-sufficiency would have been lessened with this investing viewpoint. Among the top 25 universities in the United States, for instance, the top three—Johns Hopkins University (\$3.42 billion), the University of California, San Francisco (\$1.80 billion), and the University of Pennsylvania (\$1.79)—receive significant yearly funding for research.

Major colleges around the world have a broad vision for their entry into the workforce, hoping to play a significant role as stakeholders in huge corporations. The academic reputation of educational institutions may suffer from a limited perspective in which colleges themselves enter the labor market to market their goods. In some nations, it is believed that every institution and organization must conduct research and use scientific

data to address societal demands. Universities must receive a portion of the research funding from both public and private entities (Forbes, 2024).

In the 18 American colleges that were listed in the 2021 Times ranking, the average research income for each faculty member is approximately \$9,400 (Student News Agency of Iran, 2022).

The United Kingdom, Germany, the Netherlands, Switzerland, and France are among the European nations with universities ranked in the top 200 worldwide in 2021. Accordingly, the Netherlands, Switzerland, and France have the second-highest number of universities in the top 200 institutions globally, after the United Kingdom and Germany. The average yearly research pays for faculty members at Dutch universities that were listed in the 2021 Times ranking is \$64,000, followed by Switzerland at \$49,000 and Germany at \$47,000 (Student News Agency of Iran, 2022).

Furthermore, reliable data indicates that, even though it decreased by 2.6%, the research income at Canada's top 50 research universities totaled \$9.05 billion between fiscal years 2021 and 2022. The average research income per faculty member in the fiscal year 2022 was \$219,100, which was 3.8% less than in the fiscal year 2021 (Research Info-source, 2024)."

Universities in Iran alone carried out 10,835 research projects for public and private entities in 2022, if this pattern is followed in the adjacent country between 2013 and 2021. It is important to remember that these projects were intended to be completed in a year or over a five-year timeframe. According to a report by Iran's Ministry of Higher Education (Ministry of Science), research projects helped the nation increases its national income by 131 billion Iranian Toman in 2020 and 129 billion Iranian Toman in 2021, or almost \$3 million (Farhikhtegan Newspaper of Iran, 2023).

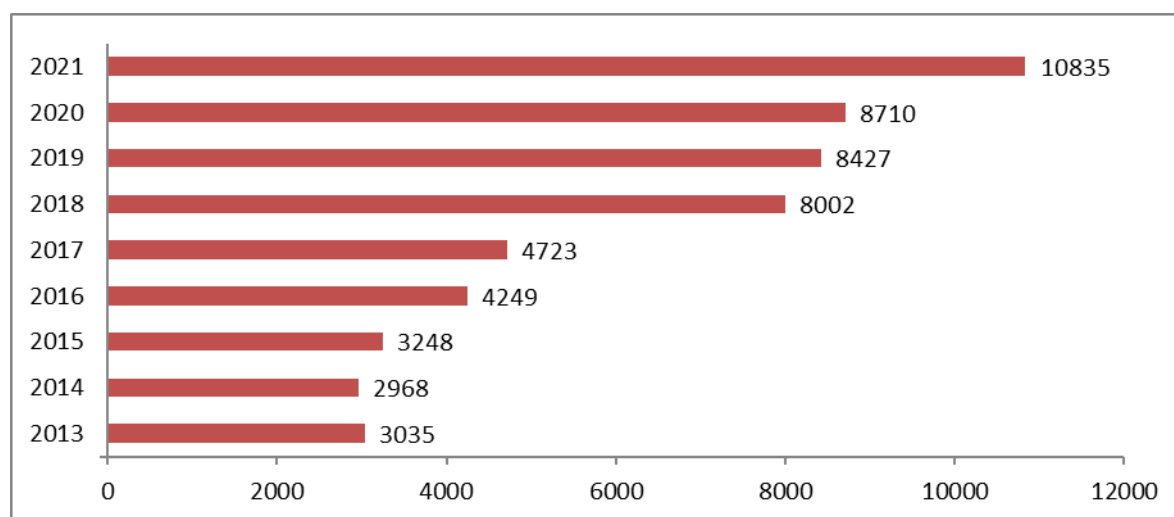


Figure 2. shows the number of completed and ongoing research projects at Iranian universities between the years 2013 and 2021.

The submission of research proposals by universities is one of the key factors in creating connection between them and executive organizations or industries. For instance, Amirkabir University of Technology registered and submitted 740 research proposals to executive bodies in the year 1401 (2022–2023). The institution has 500 faculty members, according to

its official website. This means that each faculty member has, on average, submitted 1.5 research proposals (Farhikhtegan Newspaper, 1402).

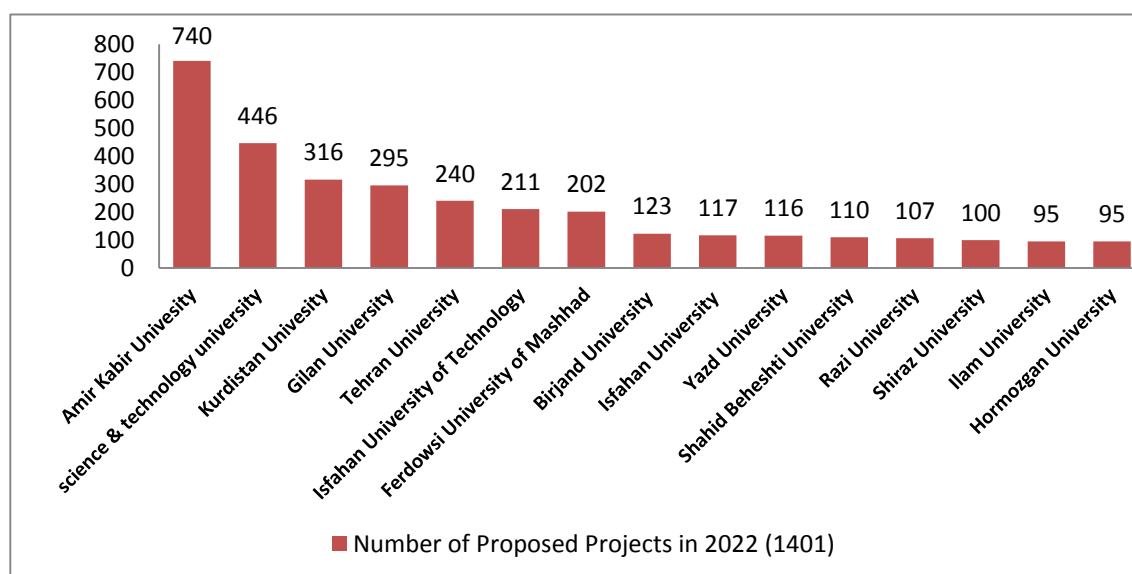


Figure 3. shows the number of proposals submitted by Iranian universities in the year 2022 (Farheekhtegan Newspaper, 2023).

Research Findings

According to the research's findings, universities' goal, purpose, and nature of interaction with society have evolved over the past 20 years as a result of their increased responsibility for tackling society's real-world problems. It must be admitted that Afghanistan's scientific and academic establishments have failed to take the necessary fundamental actions in this regard over the years. Based on the findings of this study and the experiences of other nations, these crucial actions will be reinforced when different research centers are set up in Afghanistan's educational institutions and, with funding, accurately identify the problems that organizations, businesses, and society face. Targeted budgetary and financial assistance allocation is necessary, as is the implementation of research knowledge in real-world domains. Organizations in charge of allocating budgets in a number of nations (like the Ministry of Finance) have seen the money required for universities as an investment in learning facilities and research facilities rather than a consumer expenditure. The investment perspective can help universities become self-sufficient and ease the difficulties that come with conducting scientific research.

Universities have a responsibility to use the findings of scientific research to address the concrete problems facing society. To accomplish their objectives, they must generate revenue from scientific research while offering industry and non-industrial suggestions through knowledge production, innovation, and creativity. Academic institutions must become self-sufficient through research centers and other revenue streams in order to accomplish these goals. This strategy works in both developed and developing nations, and according to earlier research and experiences cited in this study, each faculty member in developed nations makes an annual contribution to government revenue and university capital of between \$9,400 and \$219,100. On average, every faculty member in nearby and

regional nations suggests at least one industrial or non-industrial research project to public and commercial entities. The defined technique allows the revenue from these projects to be used in subsequent programs.

Given this circumstance, a well-defined national strategy for accurately diagnosing societal problems ought to exist. For this, specific titles should be established, and universities should be the conduit for research activities. However, reaching self-sufficiency targets would surely be difficult if research institutions are reinforced but the nation's diagnosis is not supported by reliable scientific data. **

Afghanistan is a developing nation in terms of scientific research, so its universities are able to design and propose research projects in both non-industrial areas like academic, educational, psychotherapy, judicial, medical, and agricultural projects, as well as industrial areas like engineering, industries, mining, petrochemicals, and glassmaking. These initiatives can be started to solve real-world problems and enhance community social welfare, with the goal of achieving self-sufficiency through the revenue they generate. The findings of this study suggest that universities should expand their missions to include a second purpose that is focused on research, a third mission that is focused on industry, and a fourth mission that is focused on entrepreneurship, based on the experiences of earlier studies. It is not appropriate for universities to have a limited perspective on themselves in order to sell their goods on the labor market. Therefore, self-sufficiency can be attained with a more expansive viewpoint, such as investing in large corporations as a shareholder. Scientific research will continue to be conducted with the only goal of advancing the status of faculty members, as it has in the past, unless Afghan educational institutions take decisive action based on international experiences.

Discussion

The mission and purpose of universities have altered as a result of these fundamental shifts, which are supported by the research's findings that show a change in the performance, mission, purpose, and nature of the interaction between universities and society. Today, universities are answerable to the public. In light of this, universities have a responsibility to address societal demands. This responsibility can be fulfilled when academic institutions enhance their research-oriented approach in addition to their teaching and academic activities in order to fulfill their mission of supplying society with qualified human resources. In order to accomplish these objectives, universities first need funding. In order to accomplish these objectives, universities first need funding. The study findings that demonstrate a change in the performance, mission, purpose, and nature of the relationship between universities and society support the idea that these fundamental changes have resulted in a change in the mission and purpose of universities. Universities are now answerable to the general population. Therefore, it is the duty of universities to respond to the needs of society. To achieve their objective of providing society with skilled human resources, academic institutions can accomplish this responsibility by strengthening their research-oriented approach in addition to their teaching and academic activities. To achieve these goals, institutions must first secure money. Afghanistan must implement policies based on the experiences of nations in the area and around the world in light of these accomplishments and the substantial revenue from scientific research for the self-sufficiency of universities. This would enable the nation to become financially independent, lessen

reliance on an inadequate national budget, and contribute significantly to the national economy all at once. Suggestions for raising university and higher education institutions' revenue have been made based on earlier research, particularly Roshan's (1391) study. The researcher's recommendations and these proposals are described below, taking into account the resources that are available at Afghan universities.

Conclusion

Universities are now in charge of tackling the real-world problems facing society, and the nature of their connection with it has evolved along with its goal and purpose. Funding is necessary for universities to finance scientific research. First and foremost, governments have an obligation to present budgets as investments rather than just expenses. Universities must then use scientific research, knowledge production, and innovation and creativity to address the concrete problems facing society and provide both industrial and non-industrial ideas that will fund their research. In this approach, scientific research will continue to be limited to the advancement of faculty members' academic status unless Afghan educational institutions adopt solid, decisive action based on international experiences.

Suggestions

1. It is advised that all university budgets be considered investments as opposed to expenses. By tackling issues in scientific research, this investment-focused strategy can help universities become self-sufficient.
2. It is necessary to broaden the worldview of universities. The reputation of colleges may suffer from a limited perspective in which they join the labor market only to sell their goods. It will need a more comprehensive view for universities to see themselves as important players in the labor market.
3. Universities should be obliged to get a portion of the research budget from both public and private entities in order to conduct cooperative studies.
4. Universities should set up research centers devoted to creativity and innovation across a range of disciplines. These centers ought to plan and suggest industrial and non-industrial research initiatives to public and commercial entities. Depending on the resources and requirements of each area, these research facilities ought to operate as scientific parks.
5. The chance to invest in significant, long-term initiatives should be granted to universities, with the proceeds going toward funding educational costs. For instance, constructing facilities for horticulture and cattle, agricultural processing, technology, psychotherapy, medical facilities, genetic and molecular research labs, microbiology, biochemistry, linguistics, etc.

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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